

Abstract of Disclosure

Disclosed is an inner rotor or outer rotor hybrid stepping motor of 6-phase/6m-pole type or 10-phase/10m-pole type. The motor includes a stator that has 6m or 10m pieces of magnetic poles and a rotor that is rotatably supported by the stator. Excitation windings are wound around the stator magnetic poles. The stator magnetic pole is divided into two halves in the axial direction, one half has pole teeth being line-symmetric and the other half has pole teeth being asymmetric and deviated from the symmetric pole teeth by $1/4$ pitch. The positions of the symmetric half and the asymmetric half are inverted between the adjacent magnetic poles. The rotor has a first and second rotor units each of which includes a permanent magnet and first and second rotor magnetic poles around which pole teeth are formed with deviation of $1/2$ pitch. The first and second units are connected in the axial direction through a non-magnetic material member such that they are deviated from each other by $1/4$ of rotor teeth pitch. In the case of 6m-phase, number of the rotor pole teeth equals $m(6n + 1)$ or $m(6n + 2)$ where m and n are integers equal to or larger than 1.